

on the market, the Texas Instruments TMS 9900. We incorporate this  $\mu$ P in our Super Starter System and, to date, have more than 1000 users. (This is the same processor used in TI's 990/4 computer. It is also to be used in 1979 Chrysler vehicles and is the only  $\mu$ P approved for space flight use.) If you were to make comparisons, you would find that the 9900 is closer to an IBM 360 than it is to the 8-bit controller processors discussed in your article. —*Bill Regan, Pres., Technico Inc., 9130 Red Branch Rd., Columbia, MD 20145.*

## HP-25 CLOCK/TIMER ADDENDUM

"The HP-25 as a Digital Clock and Timer" (August 1977) fails to mention several things, to wit: Register 1 should be cleared or set before each run. The display lags by one second because it shows 0.0000 *after* the first second. (The remedy is to start from step 04 on each run or put a GTO 05 at the beginning of the program and move everything else down one step, changing the last step to GTO 02. The extra step, executed only once, will not significantly affect the time.) Before adding or subtracting the timing adjustment number to or from the original time base (1/3600), one must divide by 10,000 to compensate for the position at which the seconds are displayed. When using a starting time of exact hours, the conversion to decimal hours is not necessary.

The following program is for a count-down

clock. The program starts itself properly and stops on zero. The extra steps (except 02) will not affect timing because they are executed only once. Step 02, however, must be accounted for in the time-base correction. It should make the timer run slow.

01	GTO 07	07	RCL 2
02	RCL 1	08	STO -1
03	g,x,0	09	GTO 02
04	GTO 10	10	CLX
05	f,H,MS	11	GTO 00
06	f, PAUSE		

Certain time-base corrections cause the timer to display a small number in scientific notation just before stopping at zero. It may also appear in place of 1 second. Nothing can be done about this without program modification, so the best thing to do is use it as zero or one when it occurs.

My correction was on the order of three times those necessary for the count-up timer because of the repeatedly executed extra step. Compute the correction and approximately triple it and experiment to find an accurate combination.—*Tony Wichersham, Laramie, WY.*

# Out of Tune

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In "Build 'Charge!'" (January 1978), transistor Q2 should have been shown in Fig. 1 as an npn D42C3. The Parts List was correct.